

Wilson Consulting, INC
Roger Wilson, PE
211 Davis Hollow Road
Berea, Kentucky 40403

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SEP 14 2004

PUBLIC SERVICE
COMMISSION

September 15, 2004

Beth O'Donnell, Executive Director
Kentucky Public Service Commission
PO Box 615
Frankfort KY 40602

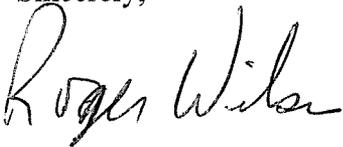
RE: Nolin RECC Elizabethtown, KY - Case Number 2004-00160

Dear Ms. O'Donnell:

Enclosed you will find the information that addresses the "First Data Request Of The Commission Staff". The data includes the original and five copies bounded by volume.

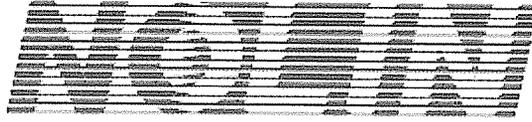
Should you need any further explanation or additional information please contact me at (859)985-2474 or the Nolin RECC office (270)765-6153.

Sincerely,



Roger Wilson, PE

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2003-2005 CONSTRUCTION WORK PLAN

ADDRESSING:

**FIRST DATA REQUEST OF COMMISSION STAFF
CASE NO. 2004-00160**

**PREPARED BY
NOLIN RURAL ELECTRIC COOPERATIVE CORPORATION
&
ENVISION ENERGY SERVICES
ROGER WILSON, PE**

SEPTEMBER JUNE 15, 2004

Response to the first data request of commission staff to
Nolin Rural Electric Cooperative Corporation
(CASE NO. 2004-00160)

Response to Item 1(a) & (b), sheet 2 of 3;

1(a) Nolin RECC has considered the additional capacity (58 Amps) available with 1/0 for use over the #2 ACSR. The evaluation for #2 vs. 1/0 is very close for the entire spread of capacity.

1(b) Nolin RECC has taken the following factors in consideration for use of #2 or 1/0 wire for a given location:

- Existing wire leading to the location of take off
- Future proposed or planned development
- Time frame of a development
- Initial cost of the construction
- Line lose characteristics of the individual wires
- Voltage lose for the end consumer
- Pole spacing or guying needs that maybe imposed on property owners

Response to Item 2(a), (b), & (c), sheet 2 of 3

2(a) Regulators were not considered.

2(b) The line conversion CFR code 396 is located just out side the new Rineyville substation. Regulation of the Voltage outside the substation fence would limit the use of future regulation further down line by the RUS standards. The load on the line is expected to reach 3.650 MW in the next two years. The economic evaluation for conductor size indicates this MW range to be more economical in the larger conductor size.

2(c) The 3/0 wire would be a limiting factor in emergency back feeds to the adjacent substation. The larger wire will give more reliable service through greater flexibility.

Response to Item 3(a) &(b), sheet 2 of 3

3(a) The map is not accurate. CFR code 382 was reversed with CFR code381. The line section 285 is indeed a single phase line that does tap off a three phase line.

3(b) A map insert has been attached at the end of this report for your reference.

Response to Item 4(a); (b), sheet 3 of 3

4(a) Nolin RECC does not have permanently installed voltage recording devices on all feeders. Nolin RECC does have some feeders equipped with devices for Capacitor bank data polling, and voltages were also monitored at residential homes for comparison. This Data on voltage was compiled on five-minute intervals and rendered in a maximum and minimum number. The data consistence showed the minimum number an instantaneous drop and the maximum a more valid system representation. The following are findings of this data analysis:

1. Colesburg Substation (sub 1 feeder 1 line section 515)
 - Francis Boley residence – account number 1132001010
 - 1/26/2004 **Max 123V**, Min 117V

Calculated voltage drop from the Milsoft model at maximum system peak was 124 Volts

2. Glendale Substation (sub 3 feeder 2 line section 386)
 - Pole number 21469 – 300 KVAR Capacitor Bank
 - 1/27/2004 **Max 120V**, Min 117V

Calculated voltage drop from the Milsoft model at maximum system peak was 120 Volts

3. Upton Substation (sub 7 feeder 1 line section 158)
 - James Cain residence – account number 3021003700
 - 11/27/2004 **Max 126 V**, Min 124V

*Calculated voltage drop from the Milsoft model at maximum system peak was **122 Volts***

4. Radcliffe Substation (sub10 feeder 5 line section 652)
 - McKendree College – account number 318070701
 - 12/14/2004 **Max 127V**, Min 120V

Calculated voltage drop from the Milsoft model at maximum system peak was 126 Volts

5. Tharp Substation (sub 12 feeder 2 line section 486)
 - Pole number 08630 – 600 KVAR Capacitor Bank
 - 3/24/2004 **Max 119V**, Min 114V

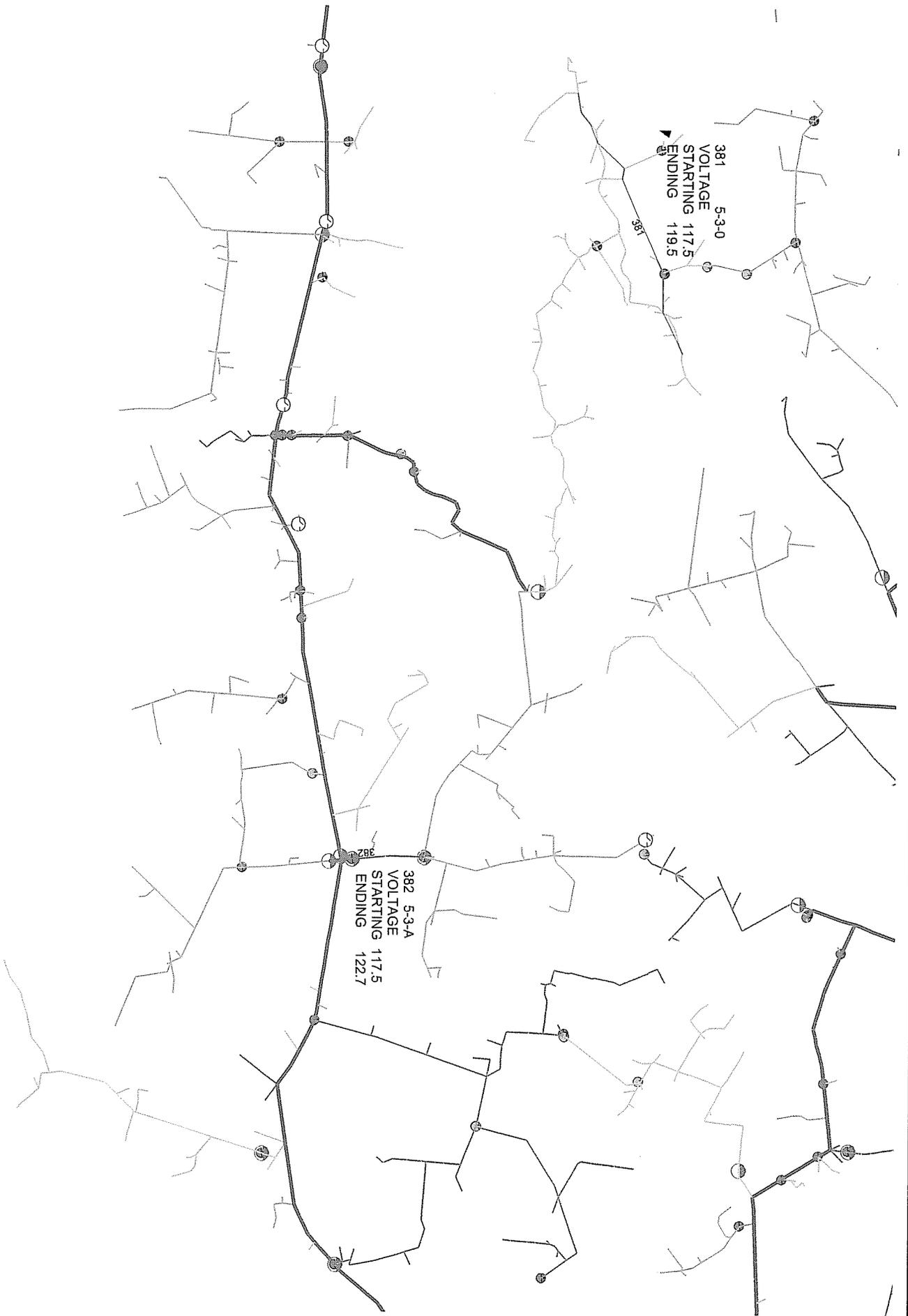
Calculated voltage drop from the Milsoft model at maximum system peak was 118 Volts

6. Tharp Substation (sub 12 feeder 4 line section 503)
 - Brad French residence – account number 1218006501
 - 11/16/2004 **Max 124V**, Min 119V

Calculated voltage drop from the Milsoft model at maximum system peak was 122 Volts

Note: Sample number 3 falls outside the 2 Volts discrepancy with the Milsoft model. The inconsistency is reflected with the sample being taken outside the maximum system peak. Samples number 5 and 6 were also taken outside the annual extreme and reflect similar Voltage conditions, yet stay within the prescribed bandwidth.

4 (b) Nolin RECC will be placing future AMR devices, equipped with voltage monitoring, at strategic points to give vital information on the system. The voltage and meter readings will be down loaded to provide a consistent and accurate data source. The new turtle automated meter reading equipment should be installed by 2005. Future comparisons will be of greater benefit and accuracy than the past methods.



381 5-3-0
VOLTAGE
STARTING 117.5
ENDING 119.5

382 5-3-A
VOLTAGE
STARTING 117.5
ENDING 122.7